COMPUTER ABSTRACTS

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CLASSIFICATION SCHEME

Since the bulk of computer literature is concerned with digital computers, most sections of the classification relate wholly or primarily to various aspects of digital computers. However, for the benefit of readers chiefly interested in analogue computers, *all* material relating to such computers is classified in a single section (Section 15). Similarly, another section (Section 16) is devoted to *all* material relating to hybrid computers (and other computers not wholly analogue or wholly digital).

Applications of computers are classified in a special section (Section 18) subdivided into specific areas of application. Where appropriate, cross-references to this section are included in Sections 15 and 16.

Books (as opposed to articles and papers in periodical literature, reports and the like) are to be found in the final section (Section 19), but are appropriately cross-referenced in other sections.

The headings of the nineteen sections into which abstracts are classified are listed below with, for each section a description of its scope and/or examples of subject matter included in it. In addition references are given to other sections related in some respect to a particular section.

1 **GENERAL.** Covers matters of general interest and/or not falling within the scope of any other section. Includes:— State-of-the-art reviews; Directories and other reference material; General bibliographies; Terminology; Standardisation; Legal aspects of computers; Computer associations; Computing services; Economics of computer use; Marketing of computers; Computer selection; Planning, organisation, management, etc., of computer installations.

2 **COMPUTER THEORY.** Includes:— Automata theory; Formal languages (other than specific programming languages, for which see Section 8). Refer also to Section 3.

3 **LOGICAL DESIGN.** Covers the design of computer logic, unrelated to specific physical circuits or devices (for which see Section 10). Refer also to Sections 2 and 9.

4 **ARTIFICIAL INTELLIGENCE.** Includes:— Learning machines; Self-organising systems; Neuron analogues; Perceptrons; Simulation of human thinking.

5 **PATTERN RECOGNITION.** Includes:— Character recognition; Speech recognition; Image processing.

6 **MATHEMATICS.** Covers all material having a high mathematical content. Refer also to Section 7.

7 **TECHNIQUES.** Includes:— Algorithms; Programs; Arithmetic operations; Arithmetic systems (such as interval arithmetic, residue arithmetic, etc.); Radix conversion; Sorting; Time-sharing. Refer also to Sections 6 and 8.

8 **PROGRAMMING.** Includes:— Languages; Operating systems; General programming techniques (but for specific production programs, see Section 7).

9 **SYSTEM DESIGN.** Covers the overall design, organisation and construction of digital computers, major parts thereof (e.g., arithmetic and control units), and multiple computer systems. Includes:— Application of digital computers in the design and production of digital computers. Refer also to Sections 2, 3 and 14.

10 **DIGITAL CIRCUITS AND COMPONENTS.** Includes:— Circuits and components for performing logic functions; Bistable and multistable circuits; Counters; Accumulators; Shift registers; Code converters; Adders; Subtractors; Multipliers; Dividers. Refer also to Section 11.

11 **DATA STORAGE.** Includes:— Memory elements; Memory matrices; Associative (content-addressable) memories; Permanent stores; Semi-permanent (read-only) stores; Magnetic recording (tape, drum, disc, card). Refer also to Section 12.

12 **INPUT/OUTPUT.** Covers peripheral equipment, its connection to and control by digital computers, and input/output techniques. Includes:— Punched cards; Printers; Display systems and devices; Speech output devices; Analogue/digital converters. Refer also to Sections 5, 11 and 13.

13 **DATA TRANSMISSION.** Includes:— Data acquisition and collection. Refer also to Section 12.

14 **SPECIFIC DIGITAL COMPUTERS.** Covers material relating to specific digital computer models (hardware and software). Includes:— Surveys of digital computer characteristics. Refer also to Section 9.

15 **ANALOGUE COMPUTERS.** Covers all material relating to analogue computers, and their components, analogue computing techniques, etc. Includes:— Applications of analogue computers (normally by cross-reference to Section 18.)

16 **HYBRID AND OTHER COMPUTERS.** Covers all material relating to hybrid computers (and all other computers not wholly analogue or wholly digital), their components, hybrid computing techniques, etc. Includes:— Digital differential analysers; Applications of hybrid and other computers (normally by cross-reference to Section 18).

17 **EDUCATION AND PERSONNEL.** Includes:— Computer science education; Instructional aids; Films; Computer personnel recruitment, selection, training, etc.; Displacement of personnel and unemployment arising from the use of computers. Does *not* include educational applications of computers, for which see Section 18 (Education sub-heading).

18 **APPLICATIONS.** Differs from other Sections in that abstracts are further classified under sub-headings (in alphabetical order) for various specific areas of application (together with a final Miscellaneous sub-heading). The Contents page opposite includes a complete list of these sub-headings. Refer also to Sections 6, 7 and 8.

19 **BOOKS.** Includes:— Conference proceedings and the like.

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Abstracts are provided for three main types of items:

(1) Articles and papers in periodicals, conference proceedings, etc.
(2) U.S. Government Reports
(3) Books

Abstracts of the first two types are arranged in the above order within each classified section of *Computer Abstracts*; book abstracts appear in a final section.

The publishers cannot supply copies of items abstracted, but will provide information if subscribers have difficulty in locating a source for any particular item. In most cases, however, the following notes should enable sources to be identified:—

Articles and papers. Titles of periodicals and other publications are generally abbreviated, but full titles and publishers are listed in the annual index. In the case of papers from proceedings of conferences and the like, full bibliographical details of the proceedings will normally be found in the Books section. A large proportion of the periodicals and other publications should be available in any good general technical library.

U.S. Government Reports. These reports relating to U.S. Government-sponsored research and development are mostly identified by AD, COM or PB serial numbers. Most reports are available from the National Technical Information Service, Springfield, Virginia 22151, U.S.A. Reports should be ordered by the serial number printed in italics in the abstract (*not* by the *Computer Abstracts* reference number). The price of a report depends on its length, on whether it is required in paper copy or microfiche form, and on whether the order originates in North America or elsewhere. In addition, prices are fixed for only a limited period of time. It is not therefore possible to quote a meaningful price in an abstract, and information about the price of any particular report should be requested from the National Technical Information Service.